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ARTZ & ARTZ, P.C.
28333 TELEGRAPH ROAD, SUITE 250
SOUTHFIELD, MI 48034

EXAMINER

BURCH, MELODY M

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/708,673
Filing Date: March 18, 2004
Appellant(s): LU, JIANBO

Jerome R. Drouillard
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 12/8/06 appealing from the Office action
mailed 2/14/06.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,005,130	Breen et al.	4-1991
6,017,101	Matsuda	1-2000

5,480,221	Morita et al.	1-1996
5,747,683	Gerum et al.	5-1998
6,842,683	Kim	1-2005
5,120,114	Schlichenmaier et al.	6-1992
6,112,845	Oyama et al.	9-2000
4,372,407	McColl	2-1983
2005/0027402	Koibuchi et al.	2-2005
5,307,888	Urvoy	5-1994
6,804,597	Posselius et al.	10-2004
6,600,974	Traechtler	07-2003
5,455,557	Noll et al.	10-1995
5,709,435	Wood	1-1998

JP-2002-12172-A (01-2002)

JP-2003-191774-A (07-2003)

EP-0253964-A2 (01-1988)

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 3683

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 31, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of US Patent 6842683 to Kim.

Schlichenmaier et al. disclose in col. 2 lines 28-37 a method of controlling a vehicle and a trailer comprising: determining a presence of a trailer and applying brake steer to the vehicle in response to the trailer to enhance control of the trailer relative to the vehicle, but is silent as to the specific way in which the brake-steer application takes place.

Kim teaches in col. 2 lines 47-54 a method of applying brake-steer including applying at least one brake at a first vehicle wheel to reduce the running radius of the vehicle.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of controlling the vehicle of Schlichenmaier et al. to have included applying brake steer comprises applying at least one brake at a first wheel to reduce a vehicle turning radius, as taught by Kim, in order to provide a means of improving vehicle stability.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and further in view of EP-0253964 (EP'964).

Schlichenmaier et al. fail to include the limitation of generating a reverse direction signal of the vehicle and applying brake steer in response to the reverse direction signal.

EP'964 teaches in the last 7 lines of the abstract the limitation of generating a

Art Unit: 3683

reverse direction signal of the vehicle and applying brake steer in response to the reverse direction signal.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of controlling the vehicle of Schlichenmaier et al. to have included effecting brake steer in response to a generated reverse direction signal, as taught by EP'964, in order to provide a means of triggering the control of the vehicle-trailer combination.

4. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and EP-0253964 (EP'964) as applied to claim 2 and further in view of US Patent 6112845 to Oyama et al.

Schlichenmaier et al., as modified, fail to include the limitation of generating the reverse direction signal from a shift lever or a transmission controller.

Oyama et al. teach in col. 4 the limitation of a reverse detecting unit 18 generating a reverse direction signal from a shift lever or a transmission controller (position of transmission gears).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the reverse direction signal of Schlichenmaier et al. to have been derived from a shift lever or a transmission controller, as taught by Oyama et al., in order to provide a functionally equivalent means of providing vehicle travel direction information.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and EP-0253964 (EP'964) as applied to claim 2 and further in view of US Patent 4372407 to McColl.

Schlichenmaier et al., as modified, fail to include the limitation of generating the reverse direction signal from a push button.

McColl teaches in col. 8 lines 66-67 the limitation of a reverse direction signal being generated from a push button.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the reverse direction signal of Schlichenmaier et al. to have been derived from a push button, as taught by McColl, in order to provide a functionally equivalent means of providing vehicle travel direction information.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and EP-0253964 (EP'964) as applied to claim 2 and further in view of JP-2003-191774 (using US 2005/0027402 to Koibuchi et al. as an English equivalent).

Schlichenmaier et al., as modified, fail to include the limitation of generating the reverse direction signal from a wheel speed sensor.

Koibuchi et al. teach in paragraph [0256] the limitation of a reverse direction signal being generated from a push button.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the reverse direction signal of Schlichenmaier et al. to have been derived from a wheel speed sensor, as taught by Koibuchi et al., in

Art Unit: 3683

order to provide a functionally equivalent means of providing vehicle travel direction information.

7. Claims 9, 17, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and further in view of US Patent 5709435 to Wood.

Schlichenmaier et al. are silent with regards to the limitation of applying a trailer brake and a vehicle brake.

Wood teaches in col. 5 lines 16-19 the limitation of applying a trailer brake and a vehicle brake.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of controlling the vehicle of Schlichenmaier et al. to have included applying a trailer brake and a vehicle brake, as taught by Wood, in order to provide a means of improving vehicle stability by helping to prevent jackknifing.

8. Claims 10 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view Kim and further in view of US Patent 6804597 to Posselius et al.

Schlichenmaier et al. lack the limitation of determining the presence of a trailer with a hitch sensor.

Posselius et al. teach in col. 4 lines 50-53 the limitation of a hitch sensor 22 for determining the presence of a trailer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of controlling the vehicle of Schlichenmaier et al. to have included a hitch sensor, as taught by Posselius et al., in order to provide a means of determining the presence and more specifically the orientation and location of a trailer.

9. Claims 11, 12, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and further in view of US Patent 5455557 to Noll et al.

Schlichenmaier et al. lack the limitation of determining the presence of a trailer with a reverse aid or ultrasonic sensor.

Noll et al. teach in col. 4 lines 2-6 the limitation of an ultrasonic sensor (Applicant notes that the reverse aid sensor is an ultrasonic sensor) for determining the presence of a trailer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of controlling the vehicle of Schlichenmaier et al. to have included an ultrasonic or reverse aid sensor, as taught by Noll et al., in order to provide a means of determining the presence and more specifically the orientation and location of a trailer.

10. Claims 13, 15, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and further in view of JP-2002-12172 (JP'172).

Art Unit: 3683

Schlichenmaier et al. lack the limitation of determining the presence of a trailer with a camera or a manually activated mechanism.

JP'172 teaches in lines 3-4 from the bottom of the solution section the limitation of a camera for determining the presence of a trailer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of controlling the vehicle of Schlichenmaier et al. to have included a camera or manually activated mechanism, as taught by JP'172, in order to provide a means of determining the presence and more specifically the orientation of a trailer.

11. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view Kim and further in view of US Patent 6804597 to Traechtler.

Schlichenmaier et al. lack the limitation of determining the presence of a trailer with a harness current.

Traechtler teaches in col. 8 lines 3-4 the limitation of using harness current for determining the presence of a trailer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of controlling the vehicle of Schlichenmaier et al. to have included the use of harness current, as taught by Traechtler, in order to provide a means of determining the presence of a trailer.

Art Unit: 3683

12. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view Kim and US Patent 5709435 to Wood as applied to claim 17 above, and further in view of EP-0253964 (EP'964).

See the rejection of claim 2.

13. Claims 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view Kim and Wood and EP-0253964 (EP'964), as applied to claim 18 above, and further in view of Oyama et al.

See the rejection of claims 3 and 5.

14. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and Wood and EP-0253964 (EP'964), as applied to claim 18 above, and further in view of McColl.

See the rejection of claim 4.

15. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and Wood and EP-0253964 (EP'964), as applied to claim 18 above, and further in view of Koibuchi et al.

See the rejection of claim 6.

16. Claims 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view Kim and Wood as applied to claim 17 above, and further in view of Posselius et al.

See the rejection of claim 10.

17. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and Wood as applied to claim 17 above, and further in view of Noll et al.

See the rejection of claims 11 and 12.

18. Claims 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view Kim and Wood as applied to claim 17 above, and further in view of JP-2002-12172 (JP'172).

See the rejection of claims 13 and 15.

19. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim and Wood as applied to claim 17 above, and further in view of Traechtler.

See the rejection of claim 14.

20. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim as applied to claim 31 above and further in view of Urvoy.

Schlichenmaier et al. fail to include the limitation of applying brake steer comprises applying an increased drive torque to a second wheel relative to a first wheel.

Urvoy teaches in col. 1 lines 19-23 the limitation of applying brake steer comprises applying an increased drive torque to a second wheel relative to a first wheel.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of controlling the vehicle of Schlichenmaier et al. to have included applying an increased drive torque to a second

Art Unit: 3683

wheel relative to a first wheel, as taught by Urvoy, in order to provide a means of improving vehicle stability.

21. Claims 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim as applied to claim 31 above and further in view of US Patent 5747683 to Gerum et al.

Schlichenmaier et al. lack the limitation of a response to the reverse signal direction signal and the steering wheel angle signal and yaw rate signal.

Gerum et al. teach in figure 1 the use of a control mechanism including reverse directional signal (from wheel speeds) and steering wheel angle signal inputs as shown.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the inputs into the controller of Schlichenmaier et al., to have included control based on a reverse directional signal and steering wheel angle signal, as taught by Gerum et al., in order to provide a means of achieving increased vehicle stability based on particular vehicle dynamic characteristics.

22. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim as applied to claim 31 above and further in view of US Patent 6017101 to Matsuda.

Schlichenmaier et al. lack the limitation of a response to the reverse signal direction signal and the steering torque signal.

Matsuda teaches in the figure on the front of the patent the use of a control mechanism including reverse directional signal (from wheel speeds) and steering torque signal inputs as shown.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the inputs into the controller of Schlichenmaier et al., to have included control based on a reverse directional signal and steering torque signal, as taught by Matsuda, in order to provide a means of achieving increased vehicle stability based on particular vehicle dynamic characteristics.

23. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim as applied to claim 31 above and further in view of US Patent 5747683 to Gerum et al. and US Patent 5480221 to Morita et al.

Schlichenmaier et al. lack the limitation of a steering wheel angle signal, a vehicle velocity signal, and a reverse direction signal.

Gerum et al. teach in figure 1 the use of a control mechanism including reverse directional signal (from wheel speeds) and steering wheel angle signal inputs as shown.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the inputs into the controller of Schlichenmaier et al., to have included control based on a reverse directional signal and steering wheel angle signal, as taught by Gerum et al., in order to provide a means of achieving increased vehicle stability based on particular vehicle dynamic characteristics.

Morita et al. show in the figure on the front of the patent a vehicle velocity sensor 73 as an input into a braking controller 71.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the inputs into the controller of Schlichenmaier et al., to have included control based on a vehicle velocity sensor and signal, as taught by

Morita et al., in order to provide a means of achieving increased vehicle stability based on particular vehicle dynamic characteristics.

24. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlichenmaier et al. in view of Kim as applied to claim 31 above and further in view of US Patent 5005130 to Breen et al.

Schlichenmaier et al. lack the limitation of a means to determine trailer position.

Breen et al. disclose in col. 9 lines 25-27 the limitation of using trailer position as a control parameter.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the inputs into the controller of Schlichenmaier et al., to have included control based on a reverse directional signal and steering wheel angle signal, as taught by Breen et al., in order to provide a means of achieving increased vehicle stability based on particular vehicle dynamic characteristics.

(10) Response to Argument

Appellant argues that “[n]either Schlichenmaier nor Kim teaches anything regarding the reduction of a turning radius selected by a driver; they teach a treatment for yaw, which is characterized by a departure from the turning radius in excess of what the driver desired.” In response to Appellant’s argument that the references fail to show certain features of applicant’s invention, it is noted that the features upon which applicant relies (i.e., reduction of a turning radius *selected by a driver*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988

Art Unit: 3683

F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The independent claims require an application of brake-steer "to reduce *a vehicle turning radius*." Examiner maintains that a turning radius in excess of what a driver desires is still a vehicle turning radius, as broadly recited. Appellant defines the term "brake-steer" in paragraph [0039] of the instant specification as a term "used to describe changing a characteristic of the vehicle such as the turning radius...using one or more brakes." Since the Schlichenmaier reference, modified by column 2 lines 47-54 of Kim, teaches the method of applying at least one or more brakes to reduce a turning radius, the cited prior art reads on the invention as claimed. Whether the turning radius results from a loss of steering control or from a driver's request is irrelevant in light of the claim recitations. Examiner notes that no additional arguments were presented to rebut the rejections of the various dependent claims. Accordingly, the rejections set forth in the final Office action have been maintained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Melody M. Burch *mmb*

Conferees:

Meredith Petravick *for QUG*
TRAB

Application/Control Number: 10/708,673

Page 17

Art Unit: 3683

Melanie Torres



Melody M. Burch
Melody M. Burch
Primary Examiner
Art Unit 3683

3/13/07